

Abstract:

An organic light emitting device is provided. The device has an anode, a cathode, and an emissive layer disposed between and electrically connected to the anode and the cathode. The emissive layer further comprises a compound having two metal centers, in which each metal has an atomic weight greater than 40. A bridging ligand, small molecule, or polymer is coordinated to both metal centers, and at least one photoactive ligand is bound to each metal.

In one embodiment, the transition dipole moment of the photoactive ligand bound to the first metal is orthogonal to the photoactive ligand bound to the second metal. In another embodiment, the first metal center and the atoms of the bridging ligand that are coordinated to the first metal center form a plane and the atoms of the bridging ligand that are coordinated to the second metal center form another plane, and the planes form an angle that is between about 80 degrees and 100 degrees. In another embodiment, the bridging ligand is diacetylacetonate. In another embodiment, a polymer or small molecule is coordinated to both metals, and the metal-ligand complex for the first metal center is different from the metal-ligand complex for the second metal center.